

cald, inter varices fortiter tuberculatâ; trivariicosâ, varicibus fimbriato-laminatis, supernè falcatis; albâ, castaneo-fusco hic illic tinctâ; aperturâ peculiariter parvâ, ovatâ.

Hab. — ?

Murex pinniger is perhaps the nearest allied species to this, though of very different form.

MUREX GAMBIENSIS. *Mur. testâ fusiformi, infernè attenuatâ, solidiusculâ, transversim obsolete striatâ, tuberculo magno prominulo inter varices; trivariicosâ, varicibus plicato-laminatis, supernè falcatis, ad basim alatis; albâ, fusco hic illic punctatâ; aperturâ parvâ, canali longiusculo.*

Also allied to the *Murex pinniger*, but of a more elongated form and different style of colouring.

MUREX MARTINIANUS. *Mur. testâ trigono-clavæformi, transversim liratâ, liris nodulosis, inæqualibus; trifariam varicosâ, varicibus rarispinosis, spinis breviusculis; luteo- vel griseo-carulescente, canali fuscescente; aperturâ ovatâ, labro dente planulatâ, erecto, munito; canali longissimo, recto, supernè spinoso.*

Hab. — ?

This shell was supposed to have been the *Murex rarispina* of Lamarck, but it having been satisfactorily shown by both Kiener and Deshayes that Mr. Sowerby's *Murex formosus* is that species, I propose to distinguish it by the above new title.

MUREX FUNICULATUS. *Mur. testâ clavæformi, transversim liratâ, liris ad summitatem funiculatis, costis tribus vel quatuor plicæformibus longitudinalibus inter varices; trivariicosâ, varicibus spinosis, spinis brevibus, acutis, sursum inclinatis; fuscescente-albâ, funiculis transversis castaneis; aperturâ ovatâ, columellâ labroque intus noduliferis; canali elongato.*

Hab. — ?

An interesting species, well-characterized by the fine dark chestnut-brown cords with which it is encircled throughout at equal distances.

MUREX NIGRISPINOSUS. *Mur. testâ elongato-clavæformi, transversim liratâ et striatâ, liris inæqualibus, subnodosis, spirâ breviusculâ; trifariam varicosâ, varicibus spinosis, spinis erecto-elongatis; canali elongato, ad extremitatem leviter recurvo, spinoso, spinis longis, subcurvatis purpurascete-albâ, fasciis tribus vel quatuor fuscescentibus subindistinctè cingulatâ, spinis purpureo-nigris.*

Hab. — ?

This shell approximates to the *Murex tribulus*, but its characters present an agreeable modification throughout, which may be considered of specific importance. The spines are constantly tipped with black.

MUREX BELLUS. *Mur. testâ clavæformi, transversim liratâ, liris tuberculato-nodosis; trivariicosâ, varicibus rotundis, tuberculato-liratis, spinâ brevi acutâ ad basim; albicante, castaneo-fusco*

supra et infra maculatâ, liris castaneo conspicuè funiculatis, columellâ labroque rufo-aurantio tinctis; canali subelongato.

Hab: — ?

Allied to the *Murex chrysostoma* in respect to its rufous orange mouth, but of a different colour and sculpture throughout.

August 26.—William Horton Lloyd, Esq., in the Chair.

“Remarks on the genus *Achatinella*, Swainson, and descriptions of six new species from Mr. Cuming’s collection.” By Dr. L. Pfeiffer.

Upon examining the long series of forms which occur in the vast family of the *Helicææ*, I have ascertained that there are several groups which Nature herself seems to have characterized as genera, though it would be very difficult to draw out such a generic definition as would exclude all other nearly allied species. One of these natural groups is the genus *Achatinella*, proposed by Swainson in Brandt’s Journal, 1828, which appears to be peculiar to the Sandwich Islands, and has been united to the genus *Bulimus* by most recent authors, as by myself in my ‘Symbolæ.’ However, the greater the number of species we become acquainted with, the more convenient it appears to unite them together as a distinct genus. I may therefore be permitted to give a short account of the species now known.

1. ACHATINELLA LUGUBRIS (*Turbo*), Chemn. Described by Lamarck under the name of *Monodonta seminigra*, and figured by Swainson in the Zool. Illustr. under the name of *A. pica*. Of course the name of Chemnitz must be retained.
2. ACHATINELLA PERVERSA, Swains. Synon. *Helix decora*, Fér., t. 155. f. 5—7; *Bulimus decorus*, Pfr. Symb.
3. ACHATINELLA ACUTA, Swains. *Hel. spirizona*, Fér., t. 155. f. 14, 15.
4. ACHATINELLA BULIMOIDES, Swains. *Hel. lorata*, Fér., t. 155. f. 9—11; *Bul. loratus*, Pfr. Symb.
5. ACHATINELLA LIVIDA, Swains. *Hel. vulpina*, Fér., t. 155. f. 1, 2; *Bul. vulpinus*, Pfr. Symb.
6. ACHATINELLA ROSEA, Swains. A very distinct species, to which none of Férussac’s figures may be referred.
7. ACHATINELLA PULCHERRIMA, Swains. This species might perhaps be considered as a dextrous variety of *A. livida*.
8. ACHATINELLA TURRITELLA (*Hel.*), Fér., t. 155. f. 13; *Bul. turritella*, Pfr. Symb.
9. ACHATINELLA TRISTIS (*Hel.*), Fér. Mus.; *Bul. tristis*, Pfr. Symb.
10. ACHATINELLA VENTULUS (*Hel.*), Fér. Mus.; *Bul. ventulus*, Pfr. Symb.
11. ACHATINELLA RADIATA, Pfr. *Ach. testâ ovatâ, solidulâ, leviter striatâ, nitidâ, viridâ et luteo radiatâ, strigis intercurrentibus nigricantibus; spirâ conicâ, obtusiusculâ; suturâ marginatâ; an-*

fractibus $5\frac{1}{2}$ vix convexiusculis, ultimo spirâ paulò breviorè; columellâ dente brevi calloso rubello munitâ; aperturâ oblongo-ovali; peristomate intus fusco-rubello-labiato.

Long. 19, diam. 10 mill.

Ins. Sandwich. (Mus. Cuming.)

12. ACHATINELLA PICTA, Pfr. Ach. testâ sinistrorsâ, ovato-elongatâ, striatulâ, corned, maculis et flammis nigro-fuscis eleganter pictâ; spirâ turrîtâ, gracili, acutiusculâ; suturâ simplice; anfractibus 6 convexiusculis, ultimo $\frac{3}{7}$ longitudinis subæquante; columellâ valdè tortâ, dente planulato, acutè prominente, albo munitâ; aperturâ oblongâ; peristomate simplice, acuto.

Long. $12\frac{1}{2}$, diam. 7 mill.

Ins. Sandwich. (Mus. Cuming.)

13. ACHATINELLA BREVIS, Pfr. Ach. testâ ovatâ, brevi, solidâ, obliquè striatulâ, nitidâ, fuscâ; spirâ conicâ, acutiusculâ; anfractibus 6 convexiusculis, ultimo $\frac{1}{3}$ longitudinis vix superante, subgloboso; columellâ breviter arcuatâ, acutè dentatâ; aperturâ rotundato-lunari; peristomate simplice, albo.

Long. 11, diam. $6\frac{1}{2}$ mill.

Ins. Sandwich. (Mus. Cuming.)

14. ACHATINELLA PYRAMIS, Pfr. Ach. testâ ovato-pyramidatâ, lævissimè striatâ, diaphanâ, virenti-corned; spirâ pyramidatâ, apice acuto; suturâ lineari, angustè marginatâ; anfractibus 8 planis, ultimo $\frac{3}{8}$ longitudinis subæquante; columellâ brevissimè arcuatâ, plicâ dentiformi complanatâ, acutâ, munitâ; aperturâ ovali.

Long. 12, diam. $5\frac{1}{2}$ mill.

Ins. Sandwich. (Mus. Cuming.)

15. ACHATINELLA CLARA, Pfr. Ach. testâ oblongâ, longitudinaliter plicatulo-striatâ, pellucidâ, pallidè corned; spirâ turrîtâ, apice obtuso; suturâ lined rufâ marginatâ; anfractibus 8 planiusculis, ultimo $\frac{1}{3}$ longitudinis vix æquante; columellâ vix arcuatâ, dente parùm prominente munitâ; aperturâ ovali.

Long. 12, diam. $4\frac{3}{4}$ mill.

Ins. Sandwich. (Mus. Cuming.)

16. ACHATINELLA CORNEOLA, Pfr. Ach. testâ ovato-oblongâ, lævissimè striatulâ, pellucidâ, nitidâ, corned; spirâ turrîto-conicâ, apice obtusiuculo; suturâ subsimplice; anfractibus 8 planiusculis, ultimo $\frac{2}{3}$ longitudinis subæquante; columellâ valdè arcuatâ, dente acutè prominente, albo, complanato instructâ; aperturâ irregulariter ovali; peristomate intus callo tenui, nitido, albo sublabiato.

Long. 15, diam. 7 mill.

Ins. Sandwich. (Mus. Cuming.)

17. ACHATINELLA GRAVIDA (Hel.), Fér., t. 155. f. 3, 4.

18. ACHATINELLA LUTEOLA (Hel.), Fér., t. 155. f. 12. These two species I have not been able to find out of the great number of varieties and species I had the opportunity of examining.

MISCELLANEOUS.

CORIXA STRIATA, CURTIS.

At the meeting of the British Association in Cambridge, Mr. R. Ball brought under the notice of the Zoological Section the fact, that the *Corixa striata* produced loud sounds while immersed in water: the following is a note since obtained by Mr. Ball from the original observer, which it is trusted will induce those who doubted the accuracy of the observation to experiment and satisfy themselves:—

“At Glasnevin, on the 27th of April 1840, found some of *C. striata*; kept them alive in a bed-room basin for six weeks; frequently heard a noise, and on watching attentively saw one of them stretch its hind-legs straight out from its body and remain quite still, resting with its middle legs on a bit of Utricularia at the bottom of the basin; it then moved the fore-legs rapidly in front of its head and gave three brisk little chirps; very often after the chirps it made a noise something like grinding a knife, only very much fainter and softer; while doing so it moved its body rapidly from side to side, still keeping the hind-legs stretched out. It very often made the chirps alone; but not the grinding noise, I think, without the chirps, either before or after (mostly before). The sound may be often heard during the day; the evening seems its favourite time, and frequently during the stillness of night, just before the day begins to break, I have often heard it keeping it up for a long time; still it is very uncertain, as it may often be watched for a long time without hearing it. Noise disturbs it very much, as it at once will stop on the slightest. Often on placing a candle near it, and remaining perfectly still, it has made the sound very merrily: the chirps could be heard distinctly in the next room by leaving the doors open, and the other noise at the far end of the room that it was in; of course, by listening attentively. The longest time that both noises lasted was while twenty was counted very fast, though it may be often repeated. *Corixa* is a very pretty insect in the water; it has the appearance as if its head, thorax, and a stripe on each side (and I believe the under-part of its body) was of the purest silvery-light, which has a very pretty effect when kept in a glass vessel, when held to the light, to see it swimming quickly. It catches very rapidly with its fore-legs those little animalculæ (which abound in water that is kept for some time), by rooting very eagerly at the bottom of the vessel amongst the mud and bits of plants. It lays its eggs on Utricularia in June; they are small and white, fixed singly at a little distance from each other on the leaves, and are hatched in about eighteen days, and swim very nimbly. Two of the *Corixa* had a curious red parasite on the upper part of the body under the wings, and one had a *Gordius* or *Filaria*. From May to the middle of June is the best time for hearing them. We got some *Corixa* the last week in September 1845, two of them lived until the 26th of November; during the first three weeks of their confinement they sometimes made a very faint noise, but not near so frequent or so audible as they make it in early summer.

“Can the striated upper-lip have anything to do with the noise? for certainly, when *Corixa* chirped, it seemed to move rapidly its fore-feet across its forehead; but in the other noise it moved its body from side to side. The head seems to be nearly hollow, and the thorax is so different from other insects, a pin can be easily introduced under it. There are queer little plaits on the under-surface of *Corixa*.

“The grinding sound may be imitated by blowing the breath against the closed teeth, gently shaking the head while doing so.

“When one of the *Corixa* died, the contents of its body were speedily sucked out by one of its companions.—In August 1844 had some alive, but could not hear any noise from them.”

ON THE HABITS OF DISPOTEA—CUP AND SAUCER LIMPETS.

I have recently received from my nephew, Lieut. William Smith of H.M.S. Carysfort, a collection of specimens of *Dispotea*, which show the great changes that shell undergoes according to the form and the position of the body to which it happens to be attached.

No. 1. The most remarkable specimen is more than an inch and a quarter in diameter, which was attached to the inner surface of one of the valves of a *Venus* shell; it is of a white colour with oblique purple-brown rays; the three rays nearest the internal cup are the broadest; the apex is nearly central, slightly twisted from right to left, and not more than five lines high. The darkest rays are towards the umbo of the shell; its surface is covered with distant short tubular spines.

No. 2. is a flat specimen, very like the former, but rather darker and with similar brown rays: the shell is covered with minute, rather crowded spines, but it has had its margin broken, and the part which has been reproduced round the edge to repair the injury is thinner, less convex, and without any spines.

No. 3. is a specimen which was attached to a *Cardium*; it is dark brown, rather thick, very minutely spinulose, much higher than wide at the base, where it is compressed; on the side opposite to the internal appendage are diverging cross-ridges formed by the adaptation of the margin of the shell as it was enlarged to the ribbed surface of the *Cardium*.

No. 4. is very similar to the preceding, and is attached to the outside of one valve of a *Cardita*; it is equally thick, dark brown, and the surface closely spinulose, but the shell is not so much modified by the ribs of the *Cardita*, which only leave marks on the side near the internal appendage; but then the animal, just within the margin of the shell, has removed the ribs from the surface of the bivalve, leaving a white concave ring the shape of the *Dispotea*. It is to be remarked, that in this shell and the variety next to be described, the animal has affixed itself, so that the edge of its shell is quite close to the lower or ventral edge of the bivalve. The greater part of the side of this *Dispotea*, next to the lower side of the bivalve, is occupied by a smaller *Dispotea*, similar in thickness, colour and surface, considering its size, to the one on which it is attached, but

of a nearly regular, convex, conical form and nearly central tip. The animal of this shell has dissolved a space on the surface of the other *Dispotea* of the size of the edge of the aperture of its shell.

No. 5. is a *Cardita* with a *Dispotea* on each of its valves placed as in specimen No. 4, that is, with one of the edges of the shell close on the lower edge of the bivalve; and there is a single valve of the same species of *Cardita* with another *Dispotea* in a similar situation.

It is to be observed, that under each of these shells, instead of the animal having eaten, or rather dissolved away part of the surface of the bivalve so as to form a smoother surface, each of the animals has deposited on their supporter a circumscribed layer of rather transparent hard calcareous matter of the exact size and form of the mouth of the shell, which fills up the greater part of the space between the ribs and forms an even and smooth base, and in one case it covers over some *Serpulae* and other bodies which were attached to the bivalve. I cannot find any indication of a muscular scar on this deposit. These *Dispotee* have a thick pale brown shell, darker towards the upper part of the cavity; the outer surface is covered with thick, irregular, radiating, flattish-topped ribs, crossed by irregular concentric ridges, having oblong or linear intervening nets, and the surface of one of the specimens is marked with some irregular cross-ridges caused by the inequalities of the shell. In one of the *Dispotee* the internal appendage or back of the shell is near the lower edge of the bivalve, and the other has it near the umbo.

I believe that the whole of these specimens belong to a single species (No. 1 to 4 is *D. tubifera*, Say, and No. 5 is *D. rugosa*, Lesson), but it is curious to observe, that when within the cavity of another shell, it is white, low, and the animal did not dissolve any part of the surface to which it was attached; that when on the outer surface of the shell, it is high, thick, dark brown, and in some cases it absorbs the surface to which it is attached; and at others that it deposits a layer on the surface of the shell to which it is affixed, of the size of the margin of the shell itself. I may observe that generic characters have been formed on less variations in habit and less characters.

In the same collection are two specimens of *Pecten* with two *Crepidula* on each: they have modified the form of the surface of each shell, and the animals have absorbed a very thin layer from the surface of each part of the shell to which they are attached.—J. E. GRAY.

On the Embryology of Actæon. By M. VOGT*.

The embryology of the *Actæon* has been the principal object of my researches; I have seen the coupling of this interesting little mollusk, I have been present at the laying of the eggs, which takes place during some hours after the *coitus*, and I have thus had an opportunity of following, from hour to hour, up to the present day, the changes which the egg undergoes during a month. I have thus been able to ascertain that the separation of the vitellus is complete in this species, and that the division into eight parts offers a very

* Extract of a letter addressed to M. Milne Edwards.

singular peculiarity, inasmuch as the four primitive parts of the vitellus do not each separate into two spheres, as is the case in other known animals, but that, on the contrary, the four new spheres, which are much smaller, are deposited upon the old ones.

The embryo presents, from its first appearance, a kind of thick disc, intersected by a median slit which might be taken as analogous to the primitive line of vertebrated animals, if subsequent observations did not show that it is at the spot which this slit occupies that the mouth is formed. The embryo is composed, some hours after the appearance of this slit, of two lateral wheels furnished with large vibratile cilia, of a beak-like prominence, which afterwards becomes the foot, and of a posterior rounded part in which the intestines are formed.

Of all the internal organs, the ear is first developed; in a subject now under observation the ears are very visible, whilst the eyes are not yet formed.

After the organs of hearing, the shell is formed; I have been able to trace all the phases of its development, as well as of the operculum which clothes the posterior surface of the foot. I now observe that the tail is on the point of detaching itself from the animal; all the loops which retained it have disappeared, and the membrane, which clothed it internally, envelops the viscera tightly, leaving a large space between them and the shell.

The digestive apparatus, which is formed after the shell, is composed of a semicircular mouth, situated between the wheels at the base of the foot, of an elongated œsophagus, which terminates in a large stomachal pouch, and of an intestine curved in the form of a hook, which terminates in an anus situated on the right. The liver is entirely separated from the intestine on its first appearance; it communicates afterwards with the stomachal pouch by a large aperture.

The stomachal pouch, in which I have often seen infusoria, especially *Naviculæ*, appears to be transformed into a buccal mass. I have seen, in the embryos of another species of Nudibranchiæ, and which greatly resemble the embryos of *Actæon*, that a protuberance furnished with projections in the form of spines was developed in the inside of this pouch. Probably this organ was the first vestige of the tongue.

Now, nearly thirty days after the laying of the eggs, my embryos swim freely in water by means of their large lateral wheels. It is remarkable that these agile animals, which for nearly a fortnight are nourished on infusoria, have yet no trace of circulation. *The heart does not yet exist*, and it is impossible that I should have overlooked it. This fact interests me greatly; and as I have seen the heart in embryos of other mollusks which were much more advanced in their development, there could be no possible error on this point.

I hope to be able to continue the researches of which I have given a very incomplete sketch, by bringing some living embryos, or rather larvae of *Actæon*, to Paris. I intend to follow their development during the winter, in order to ascertain the changes which must still

occur, for the present form of these embryos and their anatomy is quite as much separated from that of the adult *Actæon* as is that of a caterpillar and a butterfly.

I will add another observation which may perhaps interest you. A *Balanus*, which I had detached with several others and preserved alive in a bottle, deposited in my presence a prodigious quantity of little ones, which came out with the stream of water which the animal emitted at the moment of each expiration. The young barnacles had only one frontal eye and three pairs of natatory feet, the two last pairs of which were divided each into two branches. They resembled entirely Crustacea of the genus *Cyclops*.—*Comptes Rendus*, Oct. 6, 1845.

HASSALL'S BRITISH 'FRESHWATER ALGÆ.'

To the Editors of the *Annals of Natural History*.

GENTLEMEN,—In the accompanying letter I have carefully abstained from any allusions which might be regarded as offensive by your reviewer, and have confined myself as closely as possible to a refutation of certain passages of the review, which, if allowed to pass without notice, would prove injurious to my book, and which are for the most part inaccurate in themselves; I therefore trust that your sense of fairness will allow you to give my communication insertion in the *February Number of the 'Annals'*. I should wish the letter to be published in full; and as no opportunity was afforded to me to notice the review in the *same Number of the 'Annals'* in which that review appeared, none ought to be conceded to the reviewer in the same Number in which my letter appears*.

I remain, Gentlemen, your obedient servant,

January 3, 1846.

ARTHUR HILL HASSALL.

“Reddere cuique sua est æqui bonique hominis.”

Without wishing to charge your reviewer, in his notice of the ‘*History of the British Freshwater Algæ*,’ with undue partiality or prejudice, I believe that I shall be able to show, that, on certain points, he has indulged in animadversion to an extent, which on a careful and candid examination of the work in question is not justified.

It is urged therein against the originality of my work, that not a few of the plates which illustrate it are taken from the works of other writers on the Algæ; and further, that, although copies, no acknowledgement of the fact is made.

In answer to these statements, I beg to observe, that five only out of the 103 plates forming the volume of illustrations are reprints of plates previously published, and that each of these bears the name of its original designer, Thuret, Kützing and Varley.

The figures of many of the *Desmidiæ* are undoubtedly taken from

* We are very willing to comply with the above singular request of Mr. Hassall, and in the mean time leave our readers to form their own judgement.—Ed.

Jenner's and Ralfs's drawings, but no one plate is a copy of any one of their published plates, although many of the figures contained on several are so, and this I conceive to be sufficiently acknowledged in the following quotation:—"Several of the figures of this family, especially certain of the genera *Euastrum* and *Cosmarium*, are taken from those of Jenner and Ralfs illustrating the series of papers on the *Desmidiæ* inserted in the 'Annals.'"

The only instance in which there is any justice in the charge of non-acknowledgement is in reference to the genus *Closterium*, some figures of which genus are copied from Ehrenberg's great work. This omission is however a mere oversight, and scarcely sufficient to support the grave charge of your reviewer. It is to be regretted that those of our botanists who have paid attention to the genus did not send some specimens from which original figures might have been taken. The blame as regards the drawings of this genus might be made to rest with more propriety upon others than upon myself.

It can now be seen to what extent the following remarks of the reviewer are correct:—

"It is unfortunate that the author has not pointed out the cases in which his figures are not the result of his own observations, but copied from published plates. 'The appearance of 'Hass. delt.' at the bottom of *all the plates* (the italics are my own) leads us to suppose that *they are all of them original*, but a more careful examination shows that not a few are copies."

In considering the charge of a want of originality in the 'British Freshwater Alga,' it should be recollected, that that work does not profess to be merely a summary of my own personal observations, but that it bears the title of a History, and as such it became the duty of the author to collect and insert all the information which it was possible to obtain in order that the subject might be rendered as complete as it was in his power to make it. The introduction therefore of the five plates in question on points of such extreme importance and difficulty, and on which the author could not reasonably be expected to furnish original drawings, should not be urged against the work as a fault, but should rather be allowed to speak in its favour. Their absence indeed might fairly have challenged reprobation. The charge of non-originality is one, whatever may be the faults of the work, from which I certainly expected to have been exempt, and one moreover which with the least show of justice can be maintained.

On the subject of comparative characters the following observation by your reviewer occurs:—"The size of the filaments would doubtless be a valuable and most convenient mode of distinguishing the plants if it could be described in such a manner as to be always determinable, but comparative size can at no time be depended upon, unless the object with which the comparison is made be previously known." This statement of the reviewer is perfectly fair, and by means of an accurate micrometer, which instrument I did not possess when I penned my descriptions, the relative sizes of the filaments of different species might have been satisfactorily determined.

Wanting this instrument however, I was compelled to have recourse to comparative descriptions, which *your reviewer allows to have their use provided the objects of comparison be known.* Now this admitted use I take to be very important and wholly contradictory of the paragraph following that which has just been quoted and which I here insert:—"To show the *absurdity* of such comparative characters (a use has just been assigned to them), and how *totally useless* a considerable portion of Mr. Hassall's definitions of numerous species becomes, we will take a single series of species of the genus *Zygnema*." Here follows an enumeration of the comparative size of the filaments of several species of *Zygnema*, isolated from the other portions of the description; the only legitimate conclusion from which is, that other characters are required to make up a satisfactory definition, and which characters are in my work very generally supplied. Any naturalist studying the genus *Zygnema* would in a very short period become acquainted with a certain number of species, and this knowledge would enable him to appreciate to its full extent the value and importance of the comparative characters employed by me. I would therefore submit that the definitions of species of the genus *Zygnema* given by me are neither "totally useless" nor characterized by "absurdity."

In another portion of your notice of my work, the reviewer takes an exception to the figure of *Botrydium granulatum* and to the genus *Arthronema*. My answers to these strictures are, that the former species is a doubtful Alga, and that it had better to have been altogether omitted from the work; and that the latter genus is one of the most distinct of those contained in the family to which it belongs.

It now remains to me to notice only two other points in the review; the first is the opinion of the German reviewer on my views respecting the functions performed by the central organs recently discovered in the cells of *Zygnema*, and which he considers to be made up of "phantasies and absurdities." Without pausing to dwell upon the unfairness of quoting a discourteous expression of this sort apart from any reference to a single argument or fact in support of it, I would merely observe, that it comes with an ill grace from one of a people notorious for indulgence in "phantasies and absurdities." Were recrimination desirable, I could name a German naturalist and editor who entertains opinions on the reproduction of the Algae not less absurd and phantastical than any which I have expressed.

In the last place I would wish to notice certain expressions of the reviewer in reference to the labours of Mr. Ralfs. These I will introduce before proceeding to comment on them.

1st. "A more prominent reference might have been made to the very successful labours of Mr. Ralfs upon this family, and also the *Diatomaceæ*, which have appeared in our pages."

2nd. "We do not blame him (Mr. Hassall) for copying these beautiful drawings, but he ought to have taken better copies."

3rd. "We cannot afford time or space to hunt out and record all these errors, nor indeed the very many erroneous references to

synonyms, but merely observe that Mr. Ralfs is frequently made to have used a nomenclature quite different from that which really exists in the 'Annals' and 'Transactions.'

In answer to the first statement I would observe, that Mr. Ralfs' papers, so far as they had appeared up to the date of the publication of my work, are quoted throughout, and that whenever I conceived any description or fact to be appropriate or well-expressed in those papers, I have preferred to adopt the *ipsissima verba* of Mr. Ralfs, acknowledging the source of the quotation by the inverted commas, and appending the name of the writer thereto. It would have been easy for me, had I thought proper so to do, to have abstained from these quotations altogether.

So much for the first statement. Now for the comparison made between my drawings of *Desmidia* and those of Mr. Jenner and Mr. Ralfs. It should be recollected that circumstances compelled me to be my own artist, and that I had not the advantage of a professional engraver; notwithstanding this very great drawback, I will venture to assert that my plates of *Desmidia*, taken as a whole, will be found wanting in no essential particular, and that from the circumstance of the drawings being coloured, they are both more instructive and more pleasing to the sight. The best sketches contained in Mr. Ralfs' plates were drawn by Mr. Jenner, who, in his researches into the *Desmidia*, has been not less successful than Mr. Ralfs. Your reviewer might with propriety have referred to the name of Mr. Jenner in connexion with the *Desmidia*.

To the charge contained in the last statement, viz. that I have frequently attributed to him a nomenclature not belonging to him, I must, except in a single instance, plead entire ignorance. In one example I have indeed, and designedly, altered a termination of a specific name, and this at the request of Mr. Moore, the original discoverer of the species in Britain. Thus *Meloseira arenaria*, Ralfs, I changed to *M. arenosa*, Moore: the former appellation, independently of its not being the name conferred upon it by Mr. Moore, is erroneous, while the latter is not merely that originally assigned, but likewise expresses a character of the species, viz. the gritty sensation which it imparts when rubbed between the fingers. I cannot help suspecting that this charge rests upon a very feeble foundation.

Your reviewer disclaims the intention of hunting out and recording errors. I would remark, that without intending it then, he has exhibited considerable ability in the search which unknowingly he has certainly pursued.

I trust, gentlemen, that I have now proved to your satisfaction, and to that of the readers of this letter, the proposition with which I commenced, viz. that I believed that I should be able to show, that, on certain points, the reviewer has indulged in animadversion to an extent, which on a candid and careful examination of the work in question is not justified.

The following remarks, addressed by Linnæus to Haller, will not inappropriately conclude this letter:—

“If you detect any mistakes of mine, I rely on your superior